REU Site at PSU: Applications of Microscopy and Microanalysis to Multidisciplinary Research (Award No. DMR-0097575)

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A successful summer REU symposium was held on August 16, 2002 at PSU campus. It attracted a wide spread of audience including REU participants' peers, relatives and research advisors.

High Light for summer 2002 REU activities:

(1) The REU summer program began with orientation week. Students attended an intensive short course on Scanning Electron Microscopy (SEM) and Focused Ion Beam Microscopy (FIB) techniques and other sophisticated instrumentations in preparation for their research skills.

(2) After training, students were selected to six research groups at Departments of Physics, Chemistry, Mechanical Engineering, and Electric and Computer Engineering at PSU and conducted eight weeks of full time research.

(3) Scientists from Intel and FEI companies were invited to gave seminars on Transmission Electron Microscopy (TEM) use in high tech industry.

(4) A field trip to a local high tech company (FEI Company) made it possible for students to observe how an electron microscope was made. It also provided the opportunity for students to interact with the scientists and engineers in the company.

(5) Seven REU participants including one high school student were selected and sponsored by our REU program to present papers at the Pacific Northwest 13th Annual Symposium of the American Vacuum Society, and the Pacific Northwest Electron Microscopy Conference in September 11-12 in Vancouver, Washington. One of our REU participants (Rachel Smith from University of Portland) won the first prize for the outstanding student poster presentation Award.

Rachel Smith, a undergraduate, from University of Portland won the first prize for the outstanding student poster presentation Award at the Pacific Northwest 13th Annual Symposium of AVS

Michael Coulter from Oregon Episcopal School was the only high school student who gave a presentation at at the Pacific Northwest 13th Annual Symposium of AVS

Portland State University (PSU)'s REU program is the first NSF sponsored REU site in the Portland metropolitan area. The performance of this program in the last two years has had a significant impact on the undergraduate educational and research development of PSU and the local community.

Since our REU program involves more than five major science and engineering disciplines, the research projects offered the participants covered a wide range of topics including materials science, physics, chemistry, geology, mechanical engineering, and electrical and computer engineering. The educational and research activities of the program in these disciplines have greatly motivated undergraduates, in particular those underrepresented female and minority students, to pursue higher education in science and engineering. The research experience also helped some students who had not yet decided their majors to make a career decision. Our REU program is one of the more active programs boosting enrollment at PSU, and is attracting more and more students from the greater Portland area. For instance, among eleven participants of the 2002 summer REU program, eight students were from other universities including Oregon State University, Reed College, Linfield College, and the University of Portland. We also recruited students who transferred from local community colleges to PSU for pursuing degrees in science and engineering.

A major difference in this year's program compared to that of last year is our recruitment of a high school student (Michael Coulter from Oregon Episcopal School). This trial has generated a surge of interest from local high school students. Michael was the only high school student who gave a presentation at the Pacific Northwest 13th Annual Symposium of AVS. His presentation received overwhelming response from the audience.